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SPECTRAL RADIUS ALGEBRAS OF WCE OPERATORS

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Abstract. In this paper, we investigate the spectral radius algebras related to the weighted conditional expectation operators on the Hilbert spaces $L^2(\mathscr{F})$. We give a large classes of operators on $L^2(\mathscr{F})$ that have the same spectral radius algebra. As a consequence we get that the spectral radius algebras of a weighted conditional expectation operator and its Aluthge transformation are equal. Also, we obtain an ideal of the spectral radius algebra related to the rank one operators on the Hilbert space $\mathscr{H}$. Finally we get that the operator T majorizes all closed range elements of the spectral radius algebra of T, when T is a weighted conditional expectation operator on $L^2(\mathscr{F})$ or a rank one operator on the arbitrary Hilbert space $\mathscr{H}$.

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